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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Lysander Chrisstoffels

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BRINKS, HOFER, GILSON & LIONE

P.O. BOX 110285

RESEARCH TRIANGLE PARK, NC 27709

EXAMINER

SCHLENTZ, NATHAN W

ART UNIT

PAPER NUMBER

1616

MAIL DATE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/537,182	Applicant(s) CHRISSTOFFELS ET AL.	
	Examiner Nathan W. Schlientz	Art Unit 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-17, 19-29 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-17, 19-29 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of the Claims

Claims 14-17, 19-29 and 31 are pending in the present application and examined herein on the merits for patentability. No claim is allowed at this time.

Withdrawn Rejections

Rejections and/or objections not reiterated from the previous Office Action are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set of rejections and/or objections presently being applied to the instant application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 14-17, 19-22, 27-29 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Morschhäuser et al. (US 6,645,476).

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Morschhäuser et al. disclose water-soluble polymers preparable by free-radical polymerization of A) one or more macromonomers containing an end-group capable of polymerization, a hydrophilic moiety based on polyalkylene oxides, and a hydrophobic moiety which comprises hydrogen or a saturated or unsaturated, linear or branched, aliphatic, cycloaliphatic or aromatic (C_1 - C_{30})-hydrocarbon radical, wherein the macromonomers have a proportion of 0.1-50 mol% or 50.1 to 99.9 mol% of the polymer, and B) one or more olefinically unsaturated comonomers wherein the comonomers are styrenesulfonic acid, acrylamidopropylmethylenesulfonic acid (AMPS), vinylsulfonic acid, vinylphosphonic acid, allylsulfonic acid, methallylsulfonic acid and salts thereof; esters of (meth)acrylic acid with aliphatic, aromatic or cycloaliphatic alcohols having a carbon number from 1 to 22; esters of (meth)acrylic acid with alkyl ethoxylates, open-chain and cyclic N-vinylamides (N-vinyllactams) having a ring size of from 4 to 9 atoms; N,N-dimethylacrylamide, N,N-diethylacrylamide, alkoxyated acrylamides and methacrylamides; 2-vinylpyridine; 4-vinylpyridine; vinyl acetate; glycidyl methacrylate; acrylonitrile, vinyl chloride; vinylidene chloride; tetrafluoroethylene and/or diallyldimethylammonium chloride (DADMAC) (claims 1, 12, 23 and 34). Morschhäuser et al. further disclose that the one or more macromonomers (A) are chosen from the group of esters of (meth)acrylic acid with alkyl ethoxylates which include 5 to 80 ethylene oxide (EO) units and (C_{10} - C_{22})-alkyl radicals, and the one or more olefinically unsaturated comonomers (B) are chosen from the group consisting of acrylamidopropylmethylenesulfonic acid (AMPS), sodium and ammonium salts of acrylamidopropylmethylenesulfonic acid (AMPS), N-vinylformamide, N-

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vinylmethacrylamide and sodium methallylsulfonate (claims 5, 16, 27 and 38). Morschhäuser et al. also disclose that the N-vinylamides (N-vinyl lactams) having a ring size of from 4 to 9 atoms are selected from the group consisting of N-vinylformamide (NVF), N-vinylmethylformamide, N-vinylmethacrylamide (VIMA), N-vinylacetamide and N-vinylcaprolactam (claims 69, 71, 73 and 75). The polymers are added to a crop protection formulation (claims 61-68; and col. 10, ln. 18-34), which necessarily contain an active compound for the treatment of plants.

Morschhäuser et al. disclose that the polymers according to the invention can also be used for the formulation of crop protection agents. In this area of application, recent years have seen a rethink in the development of new active ingredient formulations. It is not the search for new active ingredients which has been at the forefront, but the search for auxiliary reagents for enhancing the effectiveness of known active ingredients on the surface of crops. The addition of these adjuvants, permits the reduction in the amount of active ingredient used while retaining the effectiveness of the overall formulation compared with adjuvant-free formulations. Water-soluble polyelectrolytes modified so as to be nonpolar on the one hand permit an increase in the viscosity of the active ingredient solution present, which leads to slower "repellency" from leaf surfaces and thus to a prolonged contact time on the leaf, and on the other hand, the nonpolar side radicals effect increased adsorption at the likewise nonpolar surfaces of the leaf (col. 10, ln. 18-34).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1,148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. Claims 14-17, 19-29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morschhäuser et al. (US 6,645,476) in view of Narayanan et al. (WO 99/37285).

Determination of the scope and content of the prior art

(MPEP 2141.01)

The teachings of Morschhäuser et al. are discussed above and incorporated herein by reference.

Ascertainment of the difference between the prior art and the claims

(MPEP 2141.02)

Morschhäuser et al. teach their polymers a auxiliary reagents for enhancing the effectiveness of known active ingredients on the surface of crops. However,

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Morschhäuser et al. do not explicitly disclose controlling undesired plant growth, postemergence treatment, spray treatment of plants, or applying the composition as tank additive.

Narayanan et al. teach a composition comprising an active chemical and a particulate polysaccharide matrix having improved water dispersibility and dispersion stability in aqueous solutions by the incorporation of an N-vinyl lactam monomer and a hydrophobic comonomer, wherein the composition is useful in cosmetic and pre- and post- emergent agrochemical formulations (abstract; pg. 2, ln. 1-6 and 13-19; pg. 5, ln. 21-26; pg. 6, ln. 12-16; and claims 1 and 18).

Narayanan et al. teach a composition comprising an active chemical and a particulate polysaccharide matrix having improved water dispersibility and dispersion stability in aqueous solutions by the incorporation of an N-vinyl lactam monomer and a hydrophobic comonomer, wherein the N-vinyl lactam monomer is preferably N-vinyl pyrrolidone or mixtures of N-vinyl pyrrolidone and N-vinyl caprolactam (pg. 3, ln. 2-7), and the hydrophobic comonomer is a polymerizable compound containing an olefinically unsaturated group, such as lower alkylamino lower alkyl acrylates and methacrylates, lower alkyl vinyl ethers, and mixtures of these compounds, wherein alkylamino alkylmethacrylates are preferred (pg. 3, ln. 8-12 and 16-24). Narayanan et al. further teach that the concentration of the N-vinyl lactam monomer with respect to the hydrophobic component in the copolymer can vary between about 60 and about 98.5 wt.%, preferably between about 70 and about 95 wt.%, and that the weight ratio of N-

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vinyl lactam to hydrophobic comonomer is preferably between about 4:1 and 8:1 (pg. 4, ln. 1-12).

Furthermore, Narayanan et al. teach explicit examples of compositions comprising 98:2 and 80:20 ratios of N-vinyl pyrrolidone and dimethylamino ethyl methacrylate (pg. 11, Examples 5 and 6). Narayanan et al. also teach that the modified matrix provides compatibility with a wide variety of conventional agrochemical agents including plant growth regulants, fertilizers, pre- and post- emergent herbicides, pesticides, fungicides, nematocides, etc., as well as personal care agents for skin and hair conditioning (pg. 5, ln. 21 to pg. 6, ln. 16).

Finding of prima facie obviousness

Rational and Motivation (MPEP 2142-43)

Therefore, it would have been *prima facie* obvious for one of ordinary skill in the art at the time of the invention to formulate a crop protectant composition according to Morschhäuser et al. the composition is applied for controlling plant growth, used in postemergence treatment, applied by spray treatment of the plants, and applied as a tank additive.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan W. Schlientz whose telephone number is 571-272-9924. The examiner can normally be reached on 8:30 AM to 5:00 PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NWS

/John Pak/

Primary Examiner, Art Unit 1616